

Name: _____

Date: _____

Exam: Function Reflections (Practice version 37)

1. Let function f be defined by the polynomial below:

$$f(x) = 8x^5 + 3x^4 - 4x^3 - 6x^2 + 5x - 2$$

Draw lines that match each function reflection with its polynomial:

Reflections

$-f(-x)$ •

$f(-x)$ •

$-f(x)$ •

Polynomials

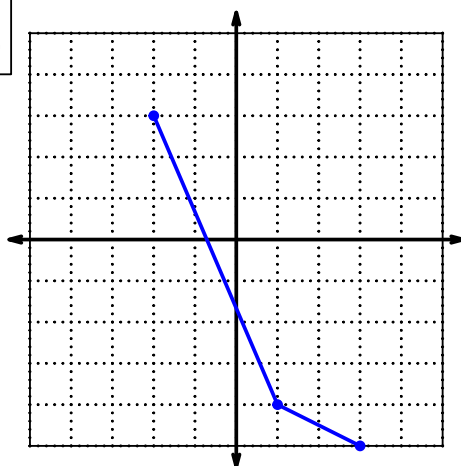
• $8x^5 - 3x^4 - 4x^3 + 6x^2 + 5x + 2$

• $-8x^5 + 3x^4 + 4x^3 - 6x^2 - 5x - 2$

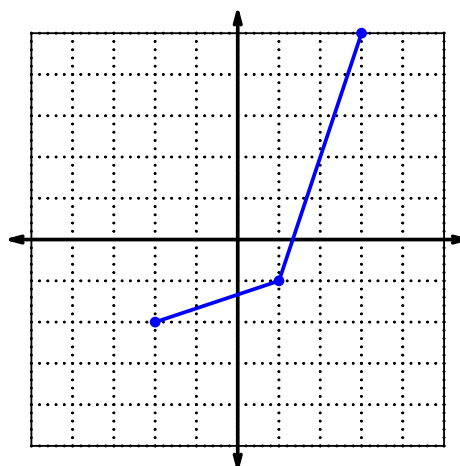
• $-8x^5 - 3x^4 + 4x^3 + 6x^2 - 5x + 2$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.

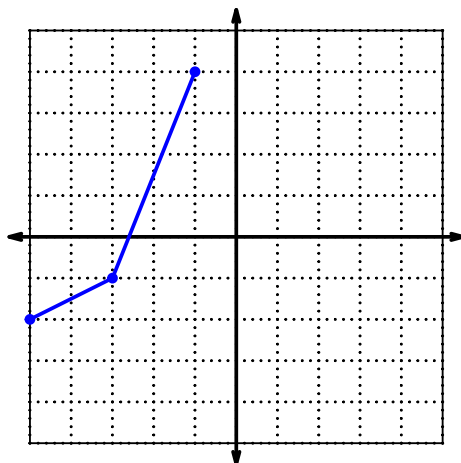
• $y = g(x)$
• $y = -g(-x)$



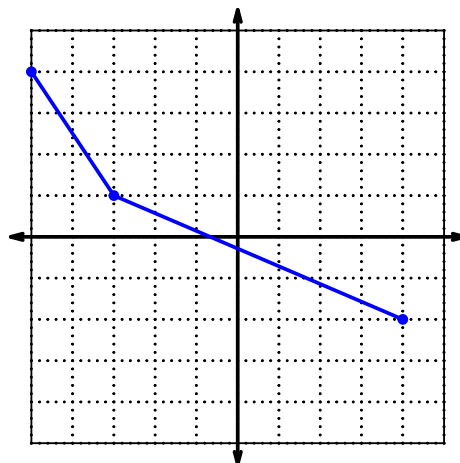
• $y = h(x)$
• $y = -h(x)$



• $y = m(x)$
• $y = m^{-1}(x)$



• $y = p(x)$
• $y = p(-x)$



Exam: Function Reflections (Practice version 37)

For all questions on this page, the functions f , g , and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	6	7	9
2	3	4	8
3	8	6	5
4	7	5	3
5	9	2	1
6	4	8	7
7	2	9	6
8	5	1	4
9	1	3	2

3. Evaluate $g(7)$.

4. Evaluate $h^{-1}(4)$.

5. By filling more rows of the table, it is possible to make function h **even**. If that were done, what would be the value of $h(-5)$?

6. By filling more rows of the table, it is possible to make function f **odd**. If that were done, what would be the value of $f(-2)$?

Exam: Function Reflections (Practice version 37)

7. A function, f , is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g , is **odd** if $g(x) = -g(-x)$ for all x in the domain.

Let polynomial p be defined with the following equation:

$$p(x) = -x^3 - x$$

- a. Express $p(-x)$ as a polynomial in standard form.

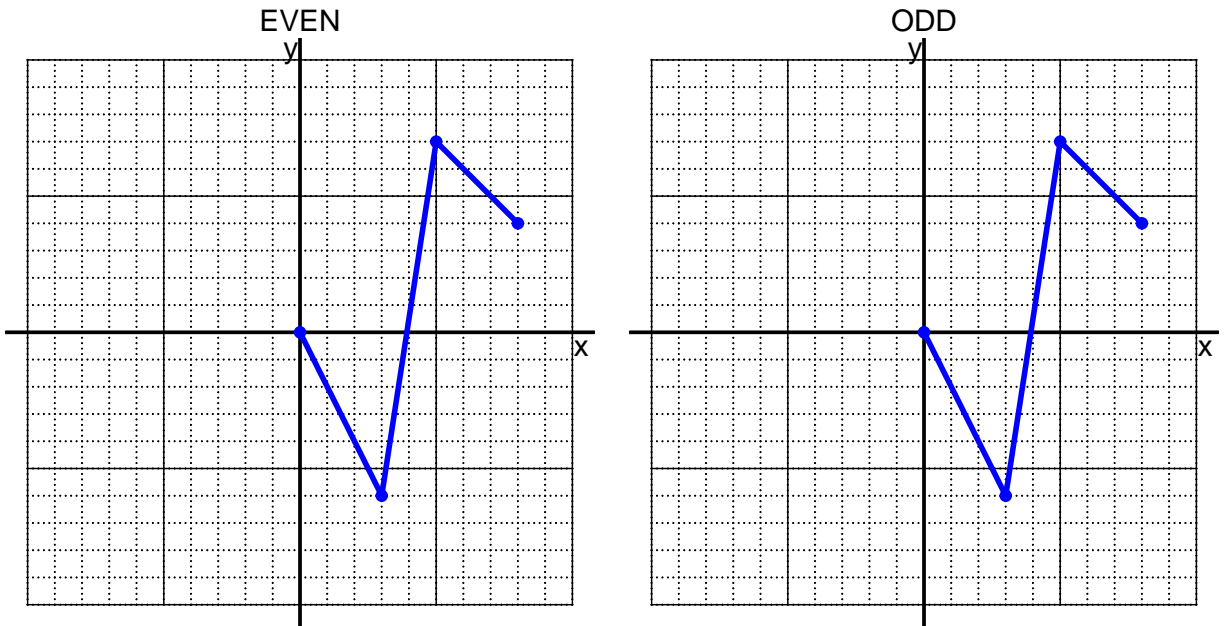
- b. Express $-p(-x)$ as a polynomial in standard form.

- c. Is polynomial p even, odd, or neither?

- d. Explain how you know the answer to part c.

Exam: Function Reflections (Practice version 37)

8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

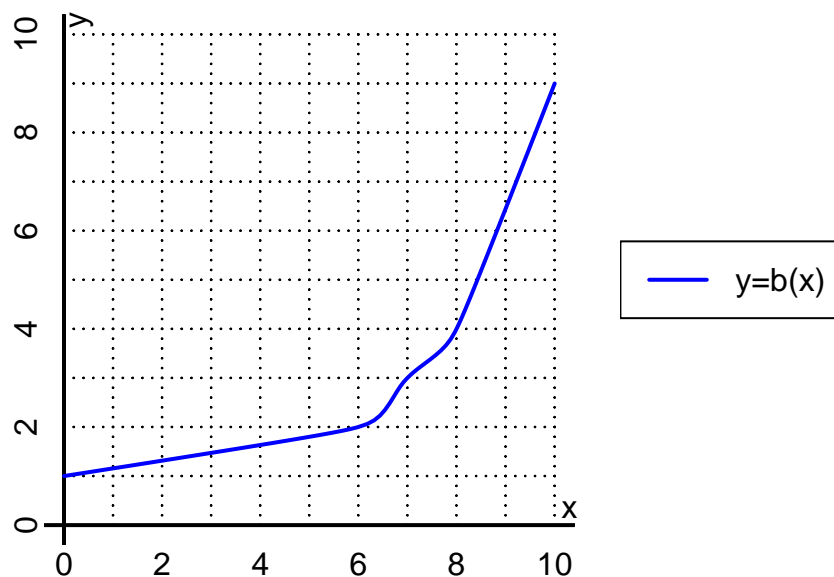
$$f(x) = 9x + 4$$

a. Evaluate $f(6)$.

b. Evaluate $f^{-1}(49)$.

Exam: Function Reflections (Practice version 37)

10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(6)$.

b. Evaluate $b^{-1}(3)$.

Exam: Function Reflections (Practice version 37)

11. Function f is defined by the table below.

a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	7			
-1	9			
0	0			
1	9			
2	-7			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?